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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,441	09/10/2003	Ed Rejda	STL 11004.00	4889

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Intellectual Property Department
Seagate Technology LLC
7801 Computer Avenue South
Bloomington, MN 55435

EXAMINER	
MCDONALD, RODNEY GLENN	

ART UNIT	PAPER NUMBER
1753	

DATE MAILED: 08/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/660,441	REJDA ET AL.	
	Examiner	Art Unit	
	Rodney G. McDonald	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-33 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-33 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 9-10-03.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claims 13-16 and 29-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 13 and 29 are indefinite because the phrase "the chemical and etch device" is unclear. Should this be "the chemical and physical etching devices"?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 33 rejected under 35 U.S.C. 102(b) as being anticipated by Libby et al. (U.S. Pat. 5,916,424).

Regarding claim 33, Libby et al. teach an apparatus and method in Fig. 1 for processing magnetic recording heads (i.e. sliders). (See Abstract) Libby et al. teach at least one fully exposed substrate 30 located on substrate holder. (Column 10 lines 30-38) Figs. 2 and 3 shows the head having an air bearing surface. (Figs. 2 and 3; Column 7 lines 31-43) A plurality of materials will be exposed on the air bearing surface as shown in Fig. 3. (See Fig. 3; Column 7 lines 41-44) A plurality of etching devices are present in the apparatus with the physical component of etching being provided by a focused ion beam source and the chemical etching component being provided by a

reactant delivery material system. (Column 8 lines 12-17; Column 8 lines 49-58) Controllers are provided for the physical etch component and chemical etch component in the form of valve elements and CPU 52. (Column 9 lines 1-3, lines 10-21) The system operates to perform uniform etching so that selected areas of material are removed. (Column 10 lines 17-21) The air bearing surface has transducing elements such as poles 82 and 84. (See Fig. 3; Column 7 lines 40-64) Utilizing pattern recognition signals, which are monitored during etching milling is carried out until the geometric pattern is milled to trim a pole tip. (Column 13 lines 26-68; Column 14 lines 1-68; Column 15 lines 13)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3-12, 17 and 19-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Libby et al. (U.S. Pat. 5,916,424) in view of Williams et al. (U.S. Pat. 6,238,582).

Regarding claim 1, Libby et al. teach an apparatus in Fig. 1 for processing magnetic recording heads (i.e. sliders). (See Abstract) Libby et al. teach at least one fully exposed substrate 30 located on substrate holder. (Column 10 lines 30-38) Figs. 2 and 3 shows the head having an air bearing surface. (Figs. 2 and 3; Column 7 lines 31-43) A plurality of materials will be exposed on the air bearing surface as shown in Fig. 3. (See Fig. 3; Column 7 lines 41-44) A plurality of etching devices are present in the apparatus with the physical component of etching being provided by a focused ion beam source and the chemical etching component being provided by a reactant delivery material system. (Column 8 lines 12-17; Column 8 lines 49-58) Controllers are provided for the physical etch component and chemical etch component in the form of valve elements and CPU 52. (Column 9 lines 1-3, lines 10-21) The system operates to perform uniform etching so that selected areas of material are removed. (Column 10 lines 17-21)

Regarding claim 17, the air bearing surface has transducing elements such as poles 82 and 84. (See Fig. 3; Column 7 lines 40-64) All other features are discussed above.

Regarding claims 5, 21, the reactant delivery system can be considered a localized gas flood apparatus. (Column 8 lines 49-58)

Regarding claims 9, 25, the controller can be attached to the substrate holder, which moves the substrate holder according to control signals. (Column 10 lines 30-40)

Regarding claims 10, 26, the physical etch device can be a focused ion beam. (Column 8 lines 12-16)

Regarding claims 11, 27, a probe 28 is attached between the substrate and the controller to generate an image of the workpiece which sends signals to the controller for removing selected portions of the recording head surface to form a precise geometric footprint of the recording head pole-tip assembly. (Column 8 lines 41-43; Column 10 lines 17-40)

Regarding claims 12, 28, the controller monitors a property level such as pole tip characteristics to form a precise geometric footprint of the pole tip. (Column 10 lines 17-21)

The differences between Libby et al. and the present claims is that the process gas for the physical etch component is not discussed (Claims 3, 19), the energy of the physical etch component is not discussed (Claims 4, 20), the process gas for the chemical etch component is not discussed (Claims 6, 7, 22, 23), the energy of the chemical etch component is not discussed (Claims 8, 24), having a plurality of substrates attached to the substrate holder is not discussed (Claims 9, 25).

Regarding the process gas for the physical etch component, Williams et al. teach utilizing Ar as the physical etch component when treating magnetic heads. (Column 9 lines 14-17)

Regarding the energy of the physical etch component, Williams teach that the energy for the physical etch component should be in the range of 500-1000 eV. (Column 8 lines 33-35)

Regarding the process gas for the chemical etch component, Williams teach that oxygen can be used as a gas for the chemical etch component. (Column 9 lines 14-17)

Regarding the energy of the chemical etch component, Williams recognize that utilizing a lower energy such as 300 eV will reduce sputtering effects and enhance the chemical effects. (Column 14 lines 54-68; Column 15 lines 1-11)

Regarding the substrate holder holding a plurality of substrates, Williams recognize that a substrate holder may be implemented for a single substrate or a multiple of substrates. (Column 5 lines 57-59)

The motivation for utilizing particular physical and chemical etch components at particular energies on a plurality of substrates is that it allows for selectively etching components on a substrate. (Column 4 lines 42-49)\

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Libby et al. by utilizing a particular process gas for the physical etch component, a particular energy for the physical etch component, utilizing a process gas for the chemical etch component, utilizing a particular energy of the chemical etch component and utilizing a plurality of substrates attached to the substrate holder as taught by Williams et al. because it allows for selectively etching components on a substrate.

Claims 2 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Libby et al. in view of Williams et al. as applied to claims 1, 3-12, 17 and 19-28 above, and further in view of Sasaki et al. (U.S. Pat. 6,163,436).

The differences not yet discussed is where the magnetic head has a first portion of AlTiC, a second portion of transducing materials and a third portion of alumina.

Sasaki et al. teach that a magnetic head has a transducing portion (Column 1 lines 10-14), a TiAlC portion (Column 2 lines 22-26) and an alumina portion and can be treated by milling. (Column 9 lines 18-33)

The motivation for utilizing a magnetic head with these elements is that it allows for improved performance of the head. (Column 1 lines 20-25)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized a first portion of AlTiC, a second portion of transducing materials and a third portion of alumina as taught by Sasaki et al. because it allows for improved performance of the head.

Claims 13-16 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Libby et al. in view of Williams et al. as applied to claims 1, 3-12, 17 and 19-28 above, and further in view of Wechsung et al. (U.S. Pat. 4,085,022).

The differences not yet discussed are utilizing shutters in front of the etching devices and controlling the shutters.

Wechsung et al. teach utilizing a shutter 14 in front of an etching source. Upon completion of etching a shutter moves to block the etching source through a control means. (Column 3 lines 33-68)

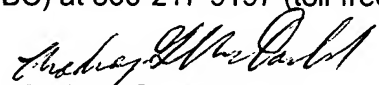
The motivation for positioning a shutter between an etching device is that it allows for accurate control of ion etching. (Column 2 lines 7-10)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized a shutter as taught by Wechsung et al. between the etching sources of Libby et al. because it allows for accurate control of etching.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M- Th with Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rodney G. McDonald
Primary Examiner
Art Unit 1753

RM
August 9, 2005